



US005369778A

United States Patent [19][11] **Patent Number:** **5,369,778****San Soucie et al.**[45] **Date of Patent:** **Nov. 29, 1994****[54] DATA PROCESSOR THAT CUSTOMIZES PROGRAM BEHAVIOR BY USING A RESOURCE RETRIEVAL CAPABILITY**

[75] **Inventors:** Marc San Soucie, Tyngsboro;
Carolyn E. Surprenant, Dracut;
Thomas Fitzgerald, Lowell; Susan
Walker, Arlington, all of Mass.

[73] **Assignee:** Wang Laboratories, Inc., Lowell,
Mass.

[21] **Appl. No.:** 127,981

[22] **Filed:** Sep. 27, 1993

Related U.S. Application Data

[63] Continuation of Ser. No. 915,775, Jul. 16, 1992, abandoned, which is a continuation of Ser. No. 88,176, Aug. 21, 1987, abandoned.

[51] **Int. Cl.⁵** G06F 15/403

[52] **U.S. Cl.** 395/800; 364/419.19;
364/942.51; 364/942.3; 364/DIG 2; 395/500;
395/600

[58] **Field of Search** 364/DIG. 1, DIG. 2,
364/419; 395/200, 275, 500, 600, 700, 800

[56] References Cited**U.S. PATENT DOCUMENTS**

4,183,083	1/1980	Chatfield	364/200
4,266,271	5/1981	Chamoff et al.	364/200
4,394,727	7/1983	Hoffman et al.	364/200
4,394,730	7/1983	Suzuki et al.	364/200
4,481,577	11/1984	Forson	364/200
4,566,078	1/1986	Crabtree	364/419
4,584,644	4/1986	Larner	364/200
4,595,980	6/1986	Innes	364/419
4,604,686	8/1986	Reiter et al.	364/200
4,648,046	3/1987	Copenhaver et al.	395/131
4,688,195	8/1987	Thompson et al.	395/12
4,719,574	1/1988	Duback et al.	364/468
4,742,482	5/1988	Inskeep et al.	364/900
4,771,380	9/1988	Kris	364/200
4,805,134	2/1989	Calo et al.	395/600
4,870,610	9/1989	Belfer	364/900
4,933,835	6/1990	Sachs et al.	364/200
4,974,191	11/1990	Amirghodsi et al.	395/275

OTHER PUBLICATIONS

Inside McIntosh vol. I, Apple Computer, pp. I-101 to I-134.

BYTE, "The Lisa Computer System" vol. 8, No. 2, Feb. 1983; pp. 33-50.

BYTE, "The Apple Macintosh Computer" vol. 9, No. 2, Feb. 1984; pp. 30-54.

Inside Macintosh, volumes I, II, and III, "The Resource Manager", 1985, pp. I-103-I-113.

Primary Examiner—Thomas C. Lee

Assistant Examiner—Maria N. Von Buhr

Attorney, Agent, or Firm—Kenneth L. Milik

[57]**ABSTRACT**

A data processing system based on an extensible set of typed data objects and a corresponding set of "object managers," each of which is a program for operating with the data stored in a corresponding type of object. The object managers in general support at least a standard set of operations. Any program can effect performance of these standard operations on objects of any type by making a particular request; in response to such a request, an object manager that is suitable for performing the requested operation on the specified type of data is identified and caused to perform the requested operation. A mechanism is provided for linking data from one object into another object. A catalog includes both information about objects and about links between objects. Data interchange services are provided for communicating data between objects of different types, using a set of standard data interchange formats. A facility is provided to permit two processes that are to cooperate in a data interchange operation to identify each other and to identify data formats they have in common. A facility is provided for managing shared data in units of data known as "resources". Customized versions of resources can be created and co-exist with standard versions of the resources. A resource retrieval function determines whether a customized or a standard resource is to be returned in response to each request for a resource.

5 Claims, 9 Drawing Sheets